

Oh, God ... Duh: Intelligent Content for Open Government in the *Strategic* Semantic Web

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Signed into law by President Trump on January 14, 2019, the *OPEN Government Data Act* (OGDA, pronounced “oh-god...duh”) establishes openness, machine-readability, and schema-standard-compliance as the default for public information. However, for eight years, since January 4, 2011, when President Obama signed the *GPRAMA Modernization Act* (GPRAMA) into law (P.L. 111-352), agencies have failed to publish their strategic and performance plans and reports in machine-readable format. Evidently, more than unfunded Congressional mandates will be required for public agencies to begin to begin to apply that good practice. Highly useful and usable tools, applications, and services will be needed and, through its StratML plug-in for Microsoft Word, [Ictect](#) is aiming to make it as easy as possible for agencies to do as instructed.

The vision of Strategy Markup Language (StratML) standard is: ***A worldwide web of intentions, stakeholders, and results.*** Published as ISO 17469-1 on February 11, 2015, StratML Part 1 specifies the core elements of strategic plans. It is applicable not only to agencies at all levels of government, worldwide, but also to *all organizations whose plans and reports should be matters of public record.* Although StratML is a duly adopted international *de jure* standard, unlike proprietary Word software, it has not yet crossed the chasm to becoming a widely adopted and used *de facto* standard. On the other hand, with growing recognition of the importance of machine-readability, the point may be nearing at which that good practice becomes widely adopted on the Web.

Here is the explicit direction set forth in [section 10](#) of GPRAMA:

... each agency required to produce strategic plans, performance plans, and performance updates ... shall ... produce such plans and reports in searchable, machine-readable formats ...

Here are some of the most highly relevant provisions of OGDA extending that good practice more broadly:

- Agencies are required to make their data [open by default](#), sharing it in an [open format](#).
- They are also directed to [collaborate](#) with non-government entities – including businesses, researchers, and the public – to understand how government data is valued and used.
- The term [data](#) is defined as “recorded information, regardless of form or the media on which the data is recorded”.
- [Machine-readable data](#) is defined as “data in a format that can be easily processed by a computer without human intervention while ensuring no semantic meaning is lost”.
- Subject to prioritization, all records subject to disclosure under the [Freedom of Information Act](#) (FOIA) are to be made available in [machine-readable](#) format. (In addition to semantics, the importance of the structure of records is outlined in Wikipedia’s article on [machine-readable documents](#).)
- Such formats should be based upon [schemas](#) developed and maintained by [standards organizations](#).

- Agencies are directed to [engage the public](#) not only in using public records but also [determining priorities](#) among them for disclosure.

Regarding the latter point, presumably, agencies should be expected to give priority to documents they have previously been directed by law to publish in machine-readable format. However, accounting for routine nonperformance of unfunded mandates, those interested in public objectives would be well-advised to take advantage of opportunities to accelerate agency compliance with OGDA.

Historic implementation failures include provisions of the *E-Government Act of 2002* (P.L. 107-347, emphasis added) requiring agencies to:

- Work together to [link their performance goals to key groups](#), including citizens, businesses, and other governments, as well as internal Federal Government operations [paragraphs [202\(b\)\(4\)](#) & [\(5\)](#)].
- [Adopt open standards](#) (e.g., StratML) enabling the organization and categorization of Government information in a way that is searchable electronically and interoperably across agencies [subsection [207\(d\)](#)].

Moreover, the *Electronic Freedom of Information Act Amendments* of 1996 (P.L. 104-231, emphasis added) requires agencies not only to make records available in “any form or format requested” but also to “make reasonable efforts to maintain ... records in forms or formats that are reproducible ...” In effect, agencies have been on notice to make public records available in open, standard, machine-readable format for *more than two decades*. Well, [duh](#), perhaps now might be good time to start doing that. Hopefully, past nonperformance will not prove to be an indicator of future results in this important instance impacting the capability to measure and evaluate the effectiveness of public expenditures.

If you pay taxes, you should care. Even if you pay no taxes or are a net beneficiary of public expenditures, you’d probably still prefer that other people’s money be spent as least wastefully as possible. For example, taxpayer funding is being wasted reinventing myriad performance reporting “[dashboards](#)” in virtually every governmental jurisdiction across the country. A Google [query of the .gov domain](#) turns up about 2.22 million hits on that term. [Steve Ballmer spent far more than necessary](#) (\$10 million) to create an outcome reporting site for Uncle Sam, when anyone could have done so at much lower cost if agencies were simply complying with GPRAMA. In any event, you might want to be consulted on how *your* money is to be spent, as required not only by OGDA but also the *Government Performance and Results Act* (GPRA), which directs agencies to “solicit and consider the views and suggestions of ... entities potentially affected by or interested in” their plans.

Besides those consultation requirements, another hopeful sign is that the OGDA was bundled into the *Foundations for Evidence-Based Policymaking Act*, which requires agencies to complement their performance reports with [evaluation plans](#). In developing those plans, agencies are to [consult with “the public](#), agencies, State and local governments, and representatives of non-governmental researchers.” Clearly, it is not as if agencies have not been given adequate direction to engage their stakeholders or, on the other hand, that stakeholders will have anyone to blame for themselves for failing to take advantage of the opportunity.

On the other hand, some opportunities are easier to capitalize on than others. Many of those with the highest potential are viewed as problems instead of opportunities and we can use all the help we can get to address them. Therein lies a tremendous challenge for enlightened developers and socially conscious entrepreneurs to leverage OGDAs to develop the tools, apps, and services required to build the [*Strategic* Sematic Web](#) – a cloud not merely of mindless links but, rather, highly productive, goal-driven, results-oriented relationships in our virtually shrinking world. Ultimately, the effect will be to populate a [pre-frontal core-text](#) for the Internet, thereby enabling the creation of more purposeful, [consciously connected](#) and less [artificially ignorant](#) (A<I>) communities.

In addition to authoring/editing interfaces like Ictect's Word plug-in, [oxygen's StratML framework](#), [Joe Carmel's XForm](#), and Chris Fox's [StratNavApp](#), other applications and services that will be required include StratML [query/discovery capabilities](#) building and improving upon the prototypes developed by [Ximdex](#) and [MarkLogic](#). Peter Winstanley is aiming to build a StratML query interface on an eXist database, and Ranjeeth Thunga and Hari Sandeep Reddy have planned to build one on the IBM stack. Meanwhile, Jorge Sanchez of Vionta is working on usability enhancements to the XForm. Among the needs still to be addressed in StratML portals services are stakeholder [review, commenting, input, and feedback](#) capabilities, leveraging the [stratml:Identifier](#) element to enable explicit referencing of goals, objectives, and performance indicators.

Ibrahim Shah has developed a [StratML stylesheet](#) activating mailto links that can be used to direct comments to discussion forums, like those supported for [Google groups](#). However, the most useful kinds of input are not merely comments, criticisms, or even helpful suggestions but, rather, *actual inputs* required to achieve shared objectives. Publishing performance plans in open, standard, machine-readable StratML format will enable intermediary services to bring suppliers and customers together in just-in-time value chains – leading from inputs, through input processing, to outputs and, through output processing, to outcomes. Advertisers and marketers will need to find new and better ways to add value as their revenue streams are more productively invested. According to [Statistica and as visualized by Tableau](#), those revenues amounted to about \$105 billion (\$105,000,000,000) in the U.S. in 2017.

More broadly speaking, value-added intermediaries can leverage the [stratml:Relationship](#) elements to enable dynamic formation of [virtual partnerships](#) in pursuit of common objectives of all kinds, on a worldwide basis. Prospective partners can document and cross-reference each other's complementary objectives in their own plans, and stakeholders can track progress against specified performance indicators. Ibrahim's stylesheet activates hyperlinks on those relationships. Query services will make performance plans and reports readily discoverable by stakeholders while data visualization services make performance indicators highly salient and comprehensible to them.

In the brave new, StratML-enabled world, bureaucracies will be broken down. Bureaucrats and kleptocrats will be left with nowhere to hide. Politicians will be disintermediated. Politics removed from all but a dwindling set of functions that may be truly "inherently governmental" in nature, in the sense that they cannot be served through the free exchange of value in more intelligent market-based transactions, in which externalities are taken appropriately into account. Meanwhile, corporate [power structures](#), characterized by hierarchies and monopolistic conglomerates that add value for no one but their executives, will find it harder to persist.

In an increasingly prosperous world, driven by inexorable technological advancement, We the People will be empowered to determine for ourselves the future of work and the roles we choose to play throughout our lives. We will engage our new-found power not by continually seeking to gain majoritarian dominion over each other through centralized, politically motivated structures but, instead, through frictionless, widely distributed, mutually beneficial interactions in [markets for good](#), unencumbered by the anachronistic constraints of a non-machine-readable Web and outmoded political philosophies.

Together with myriad other technical experts around the world, Ictect and other vendors referenced herein are well-qualified to lead the way. It has been said that luck is what happens when preparation meets opportunity. Let's get lucky and prepare to proceed with the urgency justified by the critical needs/opportunities presented to us in our limited time on earth.